

FISHERY MANAGEMENT PLAN  
FOR THE  
BLUE KING CRAB COMMERCIAL FISHERY  
IN THE SAINT MATTHEW ISLAND SECTION  
OF THE NORTHERN DISTRICT OF THE BERING SEA, 1999

by

Rance Morrison

Regional Information Report<sup>1</sup> No. 4K00-5

Alaska Department of Fish and Game  
Division of Commercial Fisheries  
211 Mission Road  
Kodiak, Alaska 99615

February 2000

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## **AUTHOR**

Rance Morrison is the Bering Sea and Aleutian Islands Area Shellfish Management Biologist, Alaska Department of Fish and Game, Division of Commercial Fisheries, P.O. Box 920587, Dutch Harbor, Alaska, 99692.

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## INTRODUCTION

This fishery management plan provides a brief overview of the blue king crab fishery which occurs annually in the Saint Matthew Island Section of the Northern District of the Bering Sea. Management practices and policies of the Alaska Department of Fish and Game (ADF&G) are outlined in this report, which includes an area description and historic fishery review. This information should provide fishers and members of industry a better understanding of how the ADF&G manages this area.

### *Description of Districts and Statistical Areas*

The Bering Sea king crab registration Area Q, includes all waters north of Cape Sarichef, south of Point Hope, and east of the U.S./Russian Convention Line of 1867; excluding waters of Bristol Bay and all waters south of 55°30' N. lat. and west of 171° W. long. (Figure 1). Area Q is separated into the Pribilof and Northern Districts. The Northern District incorporates all waters north of Cape Newenham, and is divided into three sections (the Norton Sound Section, the Saint Lawrence Island Section and the Saint Matthew Island Section). The Saint Matthew Island Section includes waters north of Cape Newenham and south of Cape Romanzof. Detailed descriptions of districts and sections are set out in the commercial shellfish regulations (ADF&G 1999).

The Bering Sea king crab registration area is further divided into statistical areas, each encompassing one degree of longitude by one half degree of latitude (Figure 2). All commercial harvests of blue king crabs are reported to the ADF&G in reference to these statistical areas.

### *Historical Fishery Perspective*

The Saint Matthew Island Section of the Northern District is a *nonexclusive* king crab registration area. The area is open to the harvest of both red and blue king crabs, however few red king crabs have ever been harvested due to low stock abundance and small relative size. The blue king crab fishery was first exploited commercially in 1977, when 10 vessels harvested 1.3 million pounds. Catch and effort continued to increase and peaked in 1983, when 164 vessels landed 9.5 million pounds. The annual harvest since that time has not exceeded 5.0 million pounds; in 1998 the harvest was 2.9 million pounds taken by 131 vessels.

## REGULATIONS

Regulations governing the commercial king crab fishery in the Saint Matthew Island Section are in 5 AAC 34.900 DESCRIPTION OF REGISTRATION AREA Q (ADF&G, 1999, beginning on page 153). Additional information on regulations pertaining to commercial fishing for king crabs in the Bering Sea is available at Dutch Harbor and Kodiak ADF&G offices.

### ***Fishing Seasons, Pot Limits and Legal Gear***

The Saint Matthew Island Section blue king crab fishery opens concurrent with the Pribilof District king crab fishery on September 15. The area is closed by emergency order when the Guideline Harvest Level (GHL) is achieved or when stock conditions, such as poor fishery performance or excessive by catch of small or female crabs, indicate a closure is necessary to protect the long term health of the stock.

Pot limits for the Northern District of the Bering Sea are as follows: 75 pots for vessels over 125 feet overall and 60 pots for vessels equal to or less than 125 feet overall (refer to regulation 5 AAC 34.925(e)(3) **LAWFUL GEAR FOR REGISTRATION AREA Q**). To ensure compliance with pot limit regulations, the main or trailer buoy on each pot must display one fishery-specific identification tag for the current year (refer to 5 AAC 34.051 (b) and (c) **KING CRAB GEAR MARKING REQUIREMENTS** and 5 AAC 34.926 (a) **KING CRAB POT MARKING REQUIREMENTS FOR REGISTRATION AREA Q**). All pots must be tagged at the time of tank inspection and throughout the fishery. Buoy tags are available for \$2.00 each at Dutch Harbor and Kodiak ADF&G offices. Buoy tags for the Saint Matthew Island Section blue king crab fishery are normally available in Dutch Harbor by the third week in August, and in Kodiak by September 1st.

Buoy tags lost during the season may be replaced according to provisions of regulation 5 AAC 34.926 (b) **KING CRAB GEAR MARKING REQUIREMENTS FOR REGISTRATION AREA Q**. Within this regulation, replacement of lost tags is permitted if the vessel operator and three crew members submit statements, in person, to the ADF&G office in Dutch Harbor, describing how tags were lost and listing the number of each lost tag.

Legal gear for the commercial blue king crab fishery in the Saint Matthew Island Section is confined to king crab pots, as defined in regulation 5 AAC 34.050 **LAWFUL GEAR FOR KING CRAB** and must be marked according to regulation 5 AAC 34.051 (a) **KING CRAB GEAR MARKING REQUIREMENTS**. Escape ring or mesh size restrictions are not required for king crab fisheries in the Northern District. However, all pots must be equipped with a biodegradable escape mechanism (see regulation 5 AAC 39.145 **ESCAPE MECHANISM FOR SHELLFISH AND BOTTOM FISH POTS**).

### ***Registration and Tank Inspections***

In addition to vessel registration requirements with the Commercial Fisheries Entry Commission (see 5 AAC 39.120 **REGISTRATION OF COMMERCIAL FISHING VESSELS**), a vessel used to take king crabs in any Bering Sea king crab fishery must first obtain a shellfish registration certificate from the ADF&G (see regulation 5 AAC 34.020 **KING CRAB AREA REGISTRATION**). In order for the shellfish vessel registration to be valid, a vessel must first have all holds and/or live tanks inspected by a department representative (see regulation 5 AAC 34.030 **INSPECTION REQUIREMENTS**). Vessels intending to participate in the Saint Matthew Island Section blue king crab fishery are required to register and have their holds inspected in Dutch Harbor, Akutan or King Cove beginning 72 hours prior to the start of the season, and at Saint Paul Island, beginning 24 hours prior to the start of the season (see regulation 5 AAC 34.940 **REGISTRATION AREA Q INSPECTION AND INSPECTION POINTS**).

United States Coast Guard (USCG) personnel will accompany ADF&G personnel during tank inspections beginning with the fall 1999 fisheries. USCG representatives will be looking at vessel stability requirements and certified letters of stability to ensure that the number of pots carried by a vessel does not exceed that vessel's stability requirements. Questions regarding the USCG stability checks should be addressed to; Lieutenant Commander Steve P. McCleary, Marine Safety Detachment, USCG, Dutch Harbor, (907) 581-3468.

### ***Landing and Pot Storage Requirements and Legal Size Limits***

Vessels fishing in the Saint Matthew Island Section blue king crab fishery must be at their chosen processing location within 72 hours following the season closure for deliveries to processors in Dutch Harbor, Akutan or King Cove. Vessels delivering to ports east of King Cove must obtain an extension of time to transit directly to point of processing by contacting an ADF&G representative in Dutch Harbor within the 24 hours following the closure. Landing requirements are outlined in regulation 5 AAC 34.941 (a)(2)(B)(ii) **LANDING REQUIREMENTS FOR REGISTRATION AREA Q**.

During a closed season, king crab pots must be removed from the water. However, king crab pots may be stored in some areas in waters less than 25 fathoms and in waters deeper than 25 fathoms for seven days following the season closure in a king crab registration area, or for the 72 hours following the closure of a district, portion of a district or portion of a registration area (see regulation , 5 AAC 34.052 **KING CRAB GEAR STORAGE REQUIREMENTS**). Additional king crab pot storage is provided in Northern District waters north of 59° N. lat., south of 59° 30' N. lat., west of 169° 31' W. long., and east of 171° W. long. (see regulation 5 AAC 34.927 (b) **KING CRAB POT STORAGE REQUIREMENTS FOR REGISTRATION AREA Q**).

The legal minimum size of crabs which can be harvested in the Saint Matthew Island Section is five and one-half inches for blue king crabs (see regulation 5 AAC 34.920 (b) **SIZE LIMITS FOR REGISTRATION AREA Q**). Only male crabs can be legally harvested.

### **HARVEST STRATEGY AND GUIDELINE HARVEST LEVEL**

The harvest strategy developed for the Saint Matthew Island blue king crab fishery is outlined in Harvest Strategy for Kodiak and Bristol Bay Red King Crab and St. Matthew Island and Pribilof Blue King Crab (Pengilly and Schmidt 1995) as follows:

“ This harvest strategy controls the removal of mature male king crabs from the stock during a commercial harvest. The harvest strategy uses thresholds, a 20% mature male harvest rate, and a maximum allowable legal male harvest rate of 60% to determine a targeted legal male harvest rate in a statistical area, district, or section. If preseason abundance estimates indicate that threshold criteria are not met, the legal male harvest rate is set to 0%--that is, the fishery is closed entirely. When threshold criteria are met, the 20% mature male harvest rate determines the target number of legal males to harvest, up to the maximum of 60% of the estimated number of legal males. The targeted number of legal males to harvest is

multiplied by an estimate of the average weight of legal males to determine a preseason GHl expressed in pounds”.

Female king crabs around Saint Matthew Island tend to prefer rocky substrate which cannot be effectively surveyed with trawl gear. For this reason, abundance estimates for male crabs are believed to be more reliable. As a result, the minimum fishery threshold for the Saint Matthew Island Section blue king crab fishery is expressed in numbers of mature male crabs. The minimum threshold for this area, in numbers of male crabs over 104 mm, is 0.60 million.

The GHl for the Saint Matthew Island Section king crab fishery is calculated annually and is based on population estimates derived from the National Marine Fisheries Service (NMFS) trawl surveys conducted each summer in the Bering Sea. The blue king crab GHl is made available to the public by ADF&G news release prior to September 1st. News releases are faxed or emailed to all major processors and industry groups active in Bering Sea crab fisheries.

Catch survey analysis of the 1999 NMFS survey indicate the abundance index for legal male blue king crabs (>120 mm) declined from 2.95 million animals in 1998 to 1.03 million animals in 1999 (a 65% reduction). Numbers of mature and pre-recruit male blue king crabs declined by 67% and 77%, respectively. Abundance of female blue king crabs in 1999 declined 72% from levels observed in 1998, going from 1.14 to 0.32 million animals.

The Saint Matthew Island Section blue king crab stock is below the minimum threshold level necessary to allow a commercial harvest. Therefore the area will remain closed to the commercial harvest of blue king crabs for the 1999 season.

## **FISHERIES MANAGEMENT AND VOLUNTEER CATCH REPORTING**

In most years the Saint Matthew blue king crab fishery is managed inseason. However, when the GHl is unusually low and/or the number of vessels is relatively high, a fishery closure is determined based on the total number of participants and historic fishery performance. In such situations the fishery closure is announced shortly after the fishery begins, and after total fishing effort is accurately determined.

Inseason management is accomplished by using data from the voluntary catch reports of participating vessel operators. These reports, sent by means of marine satellite telex and over single side band radio (frequency 4125), are received and processed daily by ADF&G staff in Dutch Harbor. Vessel operators report number of pots hauled and number of legal crabs harvested for each 24 hour period. Inseason management is preferred because management decisions are based on actual, real-time fishery performance data. Further, fishery managers can factor in prevailing weather conditions which can influence fishery performance and the resulting harvest. Any validly registered vessel may participate in the voluntary inseason catch reporting program and all vessel operators are asked to participate at the time of tag purchase, vessel registration and/or tank inspection. Currently about 50% of the vessels participating in the Saint Matthew Island Section blue king crab fishery participate in the voluntary daily inseason catch reporting program.



## **DEPARTMENT CONTACTS**

Contacts for ADF&G in Dutch Harbor are Rance Morrison, Area Management Biologist; Forrest Bowers, Assistant Area Management Biologist; and Elizabeth Wilson, lead dockside inspector and sampler. The ADF&G phone number in Dutch Harbor is (907) 581-1239; the fax number is (907) 581-1572.

Department contacts in Kodiak are Wayne Donaldson, Regional Shellfish Biologist; Dave Jackson, Kodiak Island/Alaska Peninsula Area Shellfish Management Biologist; and Mike Ruccio, Assistant Area Shellfish Biologist. The ADF&G phone number in Kodiak is (907) 486-1840; the fax number is (907) 486-1824.

## **LITERATURE CITED**

Alaska Department of Fish and Game (ADF&G). 1999. 1999-2000 Commercial Shellfish Regulations.

Pengilly, D., and D. Schmidt. 1995. Harvest Strategy for Kodiak and Bristol Bay Red King Crab and St. Matthew Island and Pribilof Blue King Crab. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Special Publication Number 7, Juneau, Alaska.

Table 1. Commercial red and blue king crab harvest for th St. Matthew Island section of the Northern District, 1977-1998.

Year	Number of		Harvest <sup>a</sup> (pounds)	Number of Pots		CPUE <sup>b</sup>	Percent Recruits	Average		Deadloss (pounds)
	Vessels	Landings		Registered	Pulled			Weight (pounds)	Length <sup>c</sup> (mm)	
1977	10	24	281,665		17,370	16	7	4.3	130.4	129,148
1978	22	70	436,126		43,754	10	N/A	4.5	132.2	116,037
1979	18	25	52,966		9,877	5	81	4	128.8	128.8
1980				C O N F I D E N T I A L						
1981	31	119	1,045,619		58,550	18	N/A	4.4	N/A	53,355
1982	96	269	1,935,886		165,618	12	20	4.6	135.1	142,973
1983	164	235	1,931,990	38,000	133,944	14	27	4.8	137.2	828,994
1984	90	169	841,017	14,800	73,320	11	34	4.5	135.5	31,983
1985	79	103	484,836	13,000	51,606	9	9	5	139	2,613
1986	38	43	219,548	5,600	22,093	10	10	4.6	134.3	32,560
1987	61	62	234,521	9,370	28,440	8	5	4.6	134.1	400
1988	46	46	302,053	7,780	10,160	30	65	4.4	133.3	22,358
1989	69	69	247,641	11,983	30,853	8	9	4.7	134.6	3,754
1990	31	38	391,405	6,000	26,264	15	4	4.4	134.3	17,416
1991	68	69	726,519	13,100	37,104	20	12	4.6	134.1	216,459
1992	174	179	544,956	17,400	56,630	10	9	4.6	134.1	0
1993	92	136	629,874	5,895	58,647	11	6	4.8	135.4	0
1994	87	133	827,015	5,685	60,860	14	60	4.6	133.3	46,699
1995	90	111	666,905	5,970	48,560	14	45	4.8	135	90,191
1996	122	189	661,115	8,010	91,205	7	47	4.7	134.6	36,892
1997	117	166	939,822	7,650	81,117	12	31	4.9	139.5	209,490
1998	131	255	612,346	8,561	89,500	7	46	4.7	135.8	14,417

<sup>a</sup>Deadloss included.

<sup>b</sup>Defined as catch of legal crabs per pot pull.

<sup>c</sup>Carapace length.

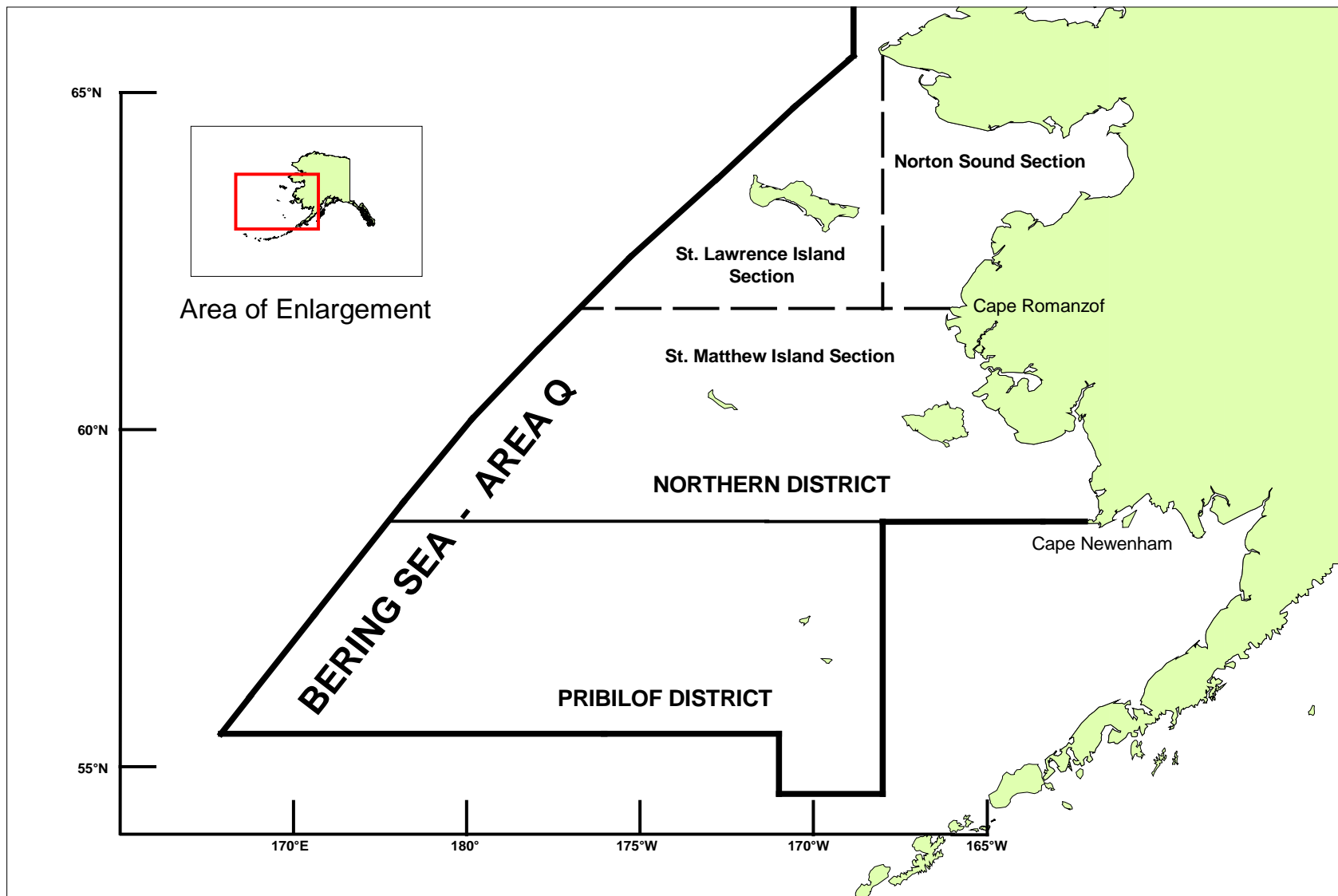


Figure 1. Bering Sea, Area Q king crab area, showing districts and sections.

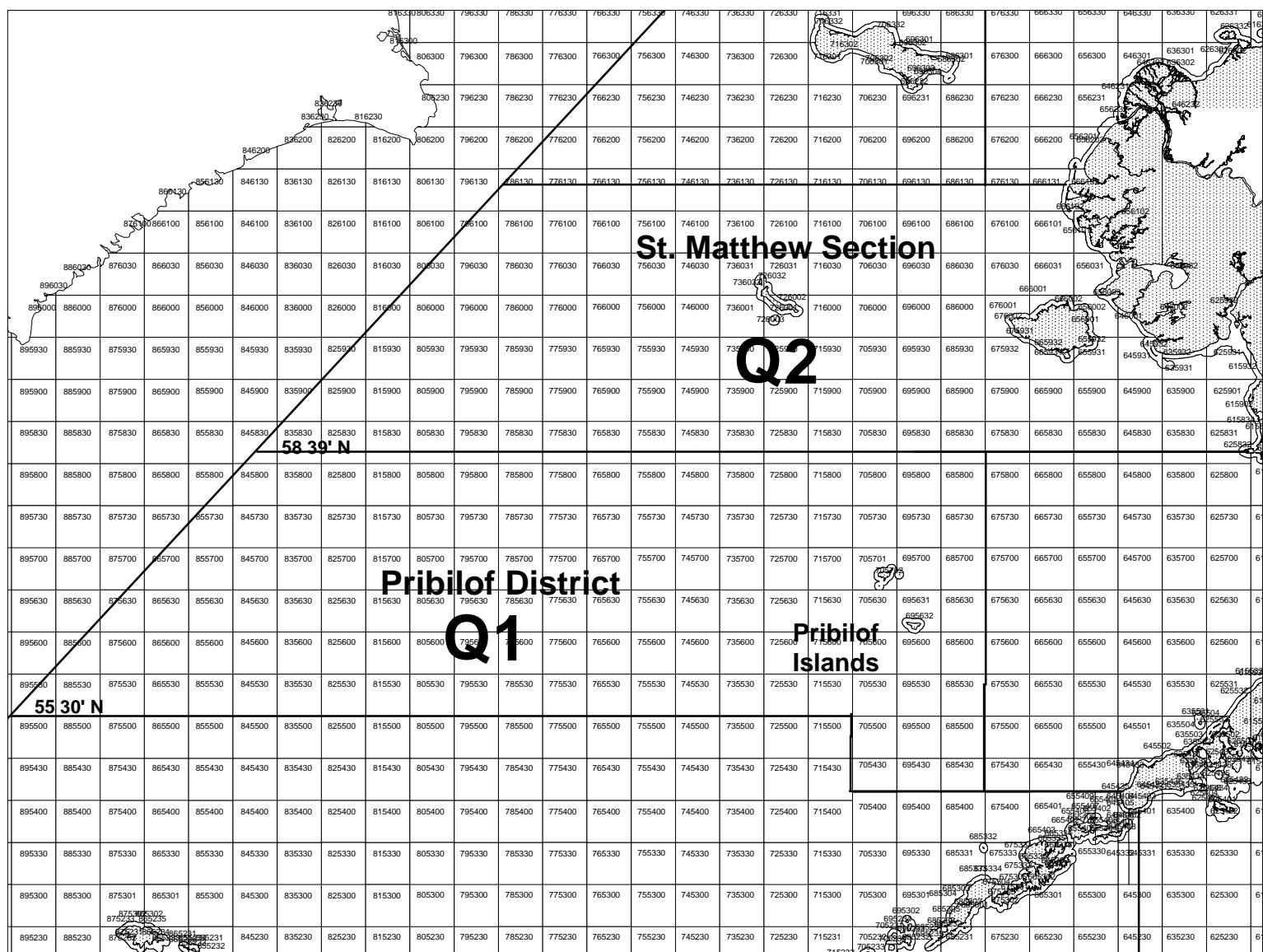


Figure 2. Statistical area map of the Saint Matthew Island Section of the Northern District of the Bering Sea.

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